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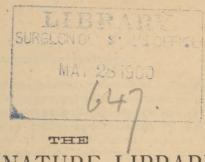
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PERCEPTIVE INTELLECT.

BY NELSON SIZER.

The intellect is properly treated under three heads: first, the Perceptives, whose organs are located along the base of the forehead, across the eye-brows, and, when large, give fulness to the forward development and breadth sidewise. The second group of organs, sometimes called the Literary faculties, are located along the middle of the forehead, giving it fulness across the center. These faculties gather up the results of the observations which the perceptive organs make; they retain experiences; they are like the secretary that records and is able to recall objects, purposes, efforts, knowledge; and these are requisite in scholarship and business and in all the walks and ways of life. The third group of intellectual organs is called the Reflective, or Reasoning; on these last depend the breadth and strength and outreach of the mind. They are the faculties which cogitate and theorize and reason; they put facts and phenomena together and recognize the results which ought to follow.

Some heads, then, are large across the brow and the forehead retreats; while both the middle and the upper sections of the forehead are somewhat deficient. These persons are the observers, the knowledge gatherers. Other foreheads are full and plump along the center horizontally, while the lower part and the upper part are less developed. We often see this in children, which age will modify. Those who have the reasoning organs stronger than the organs of memory and observation will have a beetling, overhanging forehead; the upper section is more prominent than the middle and the lower. But it should be remembered that the distance from the opening of the ear forward is the proper method and general way of judging of the intellectual capability of a given head.

These three groups of organs, the Perceptive, the Retentive and the Rea-

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soning, make up the intellect. It sometimes happens that the lower part of the forehead is exceedingly large, and the forehead looks retreating; and persons who are not accustomed to measure from the ear forward, or take into account the length of fiber in that way, think the man lacks the reasoning intellect, whereas, he has merely a superabundance



LARGE PERCEPTIVES.

of the perceptive group. The intellectual organs as a whole are located in the anterior, or frontal lobe of the brain, the Perceptives constituting about one-third of the depth of the forehead beginning at the arch of the eye and measuring upwards. These bring us into relation with the external world, and enable us to recognize the conditions and qualities and peculiarities of everything visible and tangible. The faculties of this group when strong give practical judgment, business talent, and common-sense. And, when they are analyzed and studied, we will recognize the value of their separate action as well as the influence of their combination.

INDIVIDUALITY.

This, in its action, is the first faculty relating to perception; it recognizes existences—that which has been called the "thingness of things." It relates to particles that may be exactly alike. Drops of water in a rainstorm are separate things. It recognizes existences, the separateness of things, not quality, except the fact of a thing being

this and not that, or the this or that relation. If we see a pile of sand at a distance, it is a mass, and Individuality recognizes it as a mass of something without any regard to whether it is a mass of dough, of putty or of rock, or whether it is a crayon sketch of a mass of something. It does not care for shape, but only recognizes that mass as distinct or separate from other masses. If we approach that mass, it begins to be resolved into distinct identities, or individualities. And

Individuality is the faculty that makes that distinction between the mass and the combined elements of the mass. We do not speak of Combined in the sense of number, for the grains of sand or pebbles are practically numberless; we do not try to number them. They are more things than one.

Suppose we look at a nebulous field in the heavens; it looks like one

great milky expanse; if we direct a telescope to it we begin to see different points of light. Increase the power, and the points of light stand out distinctly. That is the work of Individuality; we are not comparing the size or the form, but simply the individualism of the parts. If we look out in the gray of the morning upon the street, the pavement looks like a great indistinguishable mass. As the light continues to dawn, a close inspection will enable us to see different individualities in the pavement; points of light reveal different things, and these different paving-stones, as they begin to loom into light, are recognized as not one mass but as different masses. The masses may not differ in form or weight or color, but there is more than one mass, and Individuality, without counting, knows that one is not another.

When I have been lecturing in a popular audience, I would pick up an object or take one from my pocket, and, holding it between my thumb and finger, I would produce a large circle. or sweep of the arm; and people could see there was something between my fingers, but it traveled so fast that they could not identify anything about it, except that it was a thing. And I would say, "Now, you see that I have something between my fingers, but the rapidity of the motion prevents your investigating its SMALL PERCEPTIVES.

special quality, yet it is a thing. Individuality is just as well satisfied with it as if I held it still, and let you read 'one dollar' on its face ; but, while it is moving, Individuality is just as well satisfied that it is a thing as when I stop the motion, and permit Form, Size, Color, and Order, to investigate what kind of thing it is. But Individuality does not care to know whether what is seen is a silver dollar, a piece of chaik, a turnip, or a piece of bee's wax, a peach, an egg, or a stone. If it is a thing and is recognized, that satisfies Individuality, and its mission

in regard to it is filled. Other faculties decide what kind of thing it is." The traveler looks at the distant mountain, and it looks like a great, solid mass. It may be covered with green trees, but, like nebula, it is too far off to be resolved as being anything but a great mass. Form outlines its shape on the sky, but Individuality does not mind that; it only just recognizes its separateness from the sky, and it would be satisfied with a level as well as with a pyramidal line. It looks at the mountain as a thing, and makes the record accordingly. As the traveler approaches the mountain, he discovers certain special prominences; -a bunch of trees may make an irregular outline, and, while Form and Size recognize the shape of that something, Individuality recognizes it as a mass standing out from the rest. As the traveler approaches still nearer, he can see the masses of branches and leaves which constitute a tree top, and the whole mountain side is made up of such. But he does not see the leaves as separate existences; he is obliged to get nearer and still nearer, and, finally, every leaf stands out as separate from other leaves of the same kind. And, as the wind breezes over the trees, each leaf dances in the commotion and insists on a specific recognition. Witness the poplar tree, whose silver leaves turn up white and shimmer in the wind, especially just before a rain is expected. The whole tree top is a glittering multiplicity of separate individualities, each leaf being one of them; the whole tree is an individuality as contrasted with the willow, whose long, graceful branches sweep and swing when they are agitated by the breeze, showing separate members of the tree, and separate leaves constituting the spray upon the different twigs.

A printed page when placed as a certain distance from the observer has a gray appearance, and the man not used to looking at such would think it was one side sweep of the crayon over the whole of it. As we approach we begin to see lines of print, yet we are not near enough to read the words or distinguish the letters. But a nearer approach reveals every letter, and, of course, the literature of the page. But, when we are near enough to distinguish that there are little patches of black which we call letters, yet not near enough for Size and Form to determine what letter it is, it is, nevertheless, an individualism. Individuality is satisfied-if the man only see that the dark shadow on the paper is made up of parts. Let one sit within a yard or two of a printed handbill, where the type is not very fine, and squint his eyes so that he can see the patches of black all over the paper, yet not see distinctly enough to know the different letters; Individuality sees the black spots, sees some things -does not count them, but sees that they are repetitions of things.

It is thought by some that the recognition of objects is due to Form, Size, and Color, and that we cannot have an idea that there is more than

one thing without the action of Number, and that Individuality has very little to do with the matter. We think that Individuality can recognize that there are different objects, things—that there is a repetition of things. We look at wall-paper, and sometimes we find on it innumerable little square checks. They are all alike in Form and Size, and we claim Individuality recognizes that one is not another, that each is a thing by itself. And yet, a row of these little checks, which run clear across a room, are not numbered to our consciousness as we look at them by means of Individuality; the possibility of their being numbered consists in the fact that they exist in severalty, are individualities, separate existences, though they are exactly alike.

A bushel of beans viewed as we ordinarily view it, or a bushel of wheat, seems to be a multiplicity of individualities; but, let the beans be stewed or the wheat be ground and wetted enmasse, and it seems to be a singularity not a multiplicity; it is a single mass; it is an individualism—illustrates E PLURIBUS UNUM. Before the grinding and boiling, there is the pluribus, and the unum as yet is an unrealized fact. One-ness has not taken place; and Individuality sees that each kernel of wheat is not another kernel. The faculty of Number does not undertake to learn the sum total; we call it a bushel; that is the individual factor when we speak of the mass: it is one mass made up of various individualities.

When, therefore, Individuality recognizes things as separate existences, it does not necessarily inquire into the quality of being;—it is something, no matter what, whether a leaf, a twig, an insect, or an ox. It is something separate and distinct from other things which we can see, feel, conceive, or imagine.

Those in whom this quality of Individuality is strongly marked are quick in the power of recognition of everything that is presented to the eve. It goes still further and enables us to recognize that which we touch or the sounds that we hear. The clatter of machinery is made up of a succession of noises; the rattling strokes of a drum of distinct noises, and each is an individual noise. Of course, the ear is the agent by which it comes to Individuality. It is amusing to see a group of children turned out into the farmer's field, for the first time; and they shout, "Oh! look at this! oh! see that!" They may not know what the objects are; they do not know whether it is to eat or to trample under foot or to be used as a plaything; they do not stop to study the thing and the quality of the things they observe. When the doors are opened into a great exhibition or fair, a certain class of people will ramble as fast as they can through the many ranges of exhibited objects; and every new object attracts their attention, and they drop the first and go to the second, and so on. After awhile, they sober down and begin

to investigate and ascertain what the things are. In traveling on the road, a person with large Individuality desires to sit by the window of the car, and will thus ride all day, eagerly gazing at the rocks and stones and trees and cattle, and similar or dissimilar things are repeated mile after mile. A person of artistic taste brings other faculties into requisition as well as mere observation; the scenes that are thus devoured by the mere observer are regarded by the artist not only as individualities, but, also, in regard to their beauty or utility. A man who has not the sense of the artistical, when he sees rocks and shelving ledges, he will be thinking what fine building stone could be quarried out of the mountain side. The artist studies the components as in the picture; another man looks upon the field of timber as so much material for house building, ship building, and will speak with enthusiasm about the commercial value of a mountain side of excellent timber. The artist is sketching it into his imaginary picture and would feel, if one tree were cut and utilized by the carpenter, that the forest was being despoiled; but, when the lumberman and the carpenter and the decorator have changed the rocks of the mountain and the trees that grow at their base into a beautiful dwelling, art comes and admires the finished work and makes a picture of it. But the man who looks for timber as timber-who looks at rocks to be quarried and built into walls, uses his Individuality and his other Perceptives as readily and intensely as the artist. The artist calls into requisition his Ideality, his Spirituality; the lumber dealer and the quarryman bring their Perceptives to bear in obedience to Acquisitiveness and Constructiveness. They have no objection to the artist's decorating their work when they have constructed it, but they study other qualities. The ripened and enriched and cultivated faculties of the artist and the architect study the composition of objects in the way of structure for utility and beauty, but, to a mere observer, this might be uninteresting.

A child will pick up bits of cloth and stones and pebbles and shells, and have a basketful of those things, which to him seem precious, without doing more than to pass them over—looking at each one without any apparent study of uses and quality. The collection he would call "things;" that is what he sees them to be: if a hundred dozen of them are just alike, they are about equally interesting to the child.

Individuality co-operates with other faculties; it calls attention to that which may be useful or valuable or beautiful, and these latter qualities are recognized and appreciated by other faculties besides Individuality. A diamond uncut and a piece of quartz in a heap of sand might look much alike, and Individuality would see the two things without regard to their relative or real value; but, when we invite the other faculties of the perceptive group to study the special qualities belonging to the

observed articles, new and beautiful recognitions of quality will bring gratification.

To cultivate this faculty use it as indicated by its nature, look, criticise, investigate, observe.

FORM.

The organ of Form is located between the eye-balls, below and apparently a little backward from Individuality; and, when the organ is large, it has a tendency to push the eye-balls asunder and show breadth between the eyes. In the language of anatomy, it constitutes a convolution in the anterior parts of both hemispheres of the brain, which lie on either side of the crista galli, on the plate of the ethmoid bone directly back of the nose, where it joins the brow. And the width between the eyes indicates the degree of its development.

For every quality of matter, we have a corresponding mental faculty. As we have seen, Individuality perceives the substance or existence of things. In grammar, this faculty relates to the "Substantive" or noun. The other perceptive faculties relate to the qualities of things and to that part of speech called "Adjective," which expresses quality, such as shape, magnitude, density, color, arrangement, and number. Speakers who have large perceptive organs are affluent in adjectives, as for instance in the speech of the famous Irish orator, Phillips, in Boston, at a dinner in 1787. "Americans, you have a country vast in extent, embracing all the varieties of the most salubrious climes. The exuberance of your population is daily divesting the gloomy wilderness of its rude attire and splendid cities rise to cheer the dreary desert." Individuality takes cognizance of things as separate existences without reference to bulk or shape, density, color, number, order, or place; it appreciates the fact of the divisibility of matter. A rock weighing a ton is one thing, and, when it is crushed ready for macadamizing roads, it represents a great number of things, and the separateness of the things. Then each one of these stones has shape; it has also size, extension, or bulk; it has weight, and there is a mental faculty that recognizes its ponderability; Color appreciates its hue; Order recognizes arrangement of parts; Calculation is devoted to the numerical, or multiplicity of things; and Locality is the faculty which remembers place or direction: Tune appreciates sound; Time gives the idea of duration; Eventuality is the historian of the mind, and relates to facts, transactions; and Language gives voice to the name or description of things.

These, when combined and developed, give practical talent, and enable the person to gather data for the use of the reasoning faculties. Everything has some form;—it is square; it is round, triangular, or oblong, or it is of irregular form, a form without a name. And, in a ton of sand, there may not be two grains of the same form. But it should be remem-

bered that Form does not do the work of any other faculty. When we draw two perfect circles on the blackboard, even of varied magnitude, Form is satisfied with their shape; if we make bricks, no matter about their being the same size, they have similar or diversified forms. Form gives the name, triangle, circle, pentagon, hexagon, or octagon. Think of the world of crystals differing in form according to the material crystalized, yet in principle each sort is similar. The form of crystal tells us the kind of the mineral in question. Size must determine the difference between the grains of sand and the broken stone, as also between perfect circles.

This faculty of Form comes into play in almost everything we do; it is not alone devoted to art: it aids the mechanician and especially the blacksmith. He forges the hissing hat iron into any form required which he conceives in conjunction with his Ideality and Constructiveness, and appreciates the shape as he is making his work; the blacksmith needs to have the organ of Form large as well as the other perceptives. In drawing, especially freehand drawing, it is required. In architectural work the parts are measured, mathematics are connected with it, and there are certain rules. But, when art sweeps right out into the field of matter, without line or measurement, and draws from imagination a picture, that work exemplifies the faculty of Form. In penmanship, the faculty of Form is recognized and required; and one of the specialties of beauty and utility connected with penmanship is that the forms shall be properly related to each other. In drawing the capital letters, the curves which are made should have parallelism. In the long, downward stroke, which terminates in the scroll of capital letters—the M, the P, the S, the J, the oblong forms should be drawn in lines parallel to each other, and then it looks harmonious and beautiful. Form well developed enables the writer to do it. But, if these opposite lines or curves are not parallel, the writing looks awkward, stiff, ungainly, and uncertain.

The faculty of Form is involved in spelling; we learn by the form of the word what it is: and many a man who has large Form, in reading proof, will see if the word is of the right length and the right form, occupies room enough, but perhaps there is a wrong letter in the word. People are not aware how sharply these perceptives work in the varied duties and interests of daily life. A man, in reading the proof of his own article, is likely to overlook letters that do not belong there, which mar the spelling, the general sense satisfies him; a man who is reading another's composition is not hurried along by the sentiment of the subject as the author is; and the man that did not write it will see the defects in the spelling, if the printer has made errors.

A young lady recollected, she said, the time when the battle of Saratoga was fought and Burgoyne surrendered, because she remembered

that, in the book which stated it, the figures that recorded the date consisted of three long-tailed 7's, hanging below the line, as was the custom in those day to print, thus, 1777. The tail of the six would run above the line, the tail of the nine would run below, and the body of each would be on the line. So it was the form of the number that enabled her to remember it was 1777.

It is a good plan for people who have the faculty of Form well developed, when they hear a name they wish to remember, to write it on the palm of the hand or write it before the mind's eye in thought, to see how the letters which spell it look in form. Every day, nearly, I remember a name by knowing that it commences with B or P;—I remember how it looks, and the fact that I get the initial letter aids me in bringing the real name to the surface.

When the organ of Form is small, the eyes are near together, which gives a pinched expression to that part of the face. When the organ is large, the eyes appear to be separated, pushed away, from the root, of the nose. A pupil of ours went into a strange school in Ohio, with a friend and was introduced as a phrenologist to the professor of penmanship; and the person who introduced the Phrenologist mentioned to the phrenologist that the professor did not believe in Phrenology. Our Phrenological student instantly said, "Then I will prove it to him; if he will call up his class. I will tell him which are the two best penmen in the class." The professor replied, "If you can do that, I will believe in Phrenology." The class was called up and presented in a line in front of the Phrenologist, and, in less than two minutes, he pointed out a lady and a gentleman who, he said, were the best penmen in the school. And the lady was considered by far the best writer, and the gentleman had been a teacher of penmanship and had come there to improve his methods. So the professor of penmanship accepted Phrenology as true.

Occasionally we meet with twins who so nearly resemble each other in form and other qualities that those best acquainted with them cannot distinguish them. The writer met young ladies who were twins, eighteen years old, in Washington in 1841, and examined one of them not knowing there were twins in the house. He examined the head of the young lady and marked a chart for her; she walked out of the room with her hair hanging over her shoulders, and another with the same style of dress came in with the hair over the shoulders, and took the seat. The examiner looked up at the father as much as to say, "What has she come back for?" He said, "Please go ahead." The reply was, "It you have two daughters so much alike, let me see the other." "Well," he said, "examine her head and see if you think it is the same one." A careful examination revealed the fact that her Cautiousness was larger and her Self Esteem smaller than had been marked on the chart. Then

the other daughter came in. With the exception of the larger Caution and the smaller Self-Esteem, nobody in the room, not even the phrenologist, could tell them apart; the attention of the father and mother was called to this fact, and they could see the difference in the size of the heads of the subjects in these respects, although they could not tell the difference when they were in the room waiking about. Mary and Martha were indiscriminately called; neither parent knew which was Mary and which Martha. It was understood by the public, however, that Mary always went ahead; she was the one that had the less Caution and the larger Self-Esteem. Martha, with large Caution and moderate Self-Esteem, took the back seat and rear position, as she might have done if she were two years the younger.

I once met in Ohio a tall, broad-shouldered, brawny man, whose face was tanned as brown as a berry, he had jack boots on, and had just come in from hunting, of which he was very fond, and, by means of which he had become almost as brown as an Indian. I was requested to examine his head, and, for the first time in my life, I made the remark, "If you were a tailor-and of course you are not-(for he looked like anything but a tailor) your faculties of Form and Size are so strongly marked, and you have such good Constructiveness that you could cut a coat and make a fit without laying your hands on the man to measure him; you would know how large a coat for him should be in different places, and you would carry the form in your mind so as to plan the coat, and in a way that would fit him." And there was such a looking into the face of one another among the crowd! Finally the brawny hunter turned to one of his friends and said, "I think I won five dollars from you on a bet on that same thing." It was true, that he was a tailor, and so much an artist that he could carry the form and size in his mind in such a way as to look at a man, map out a coat for him on the table, and make a fit of it.

The modelor, the engraver, the dressmaker, tailor, shoemaker, or blacksmith, and those who make objects of irregular form, like shoe lasts, axe handles, or shoes, need strong and active faculties of Form and Size in order to accomplish the work readily and correctly.

SIZE.

The law of extension exists, and the faculty of Size takes account of that fact—enables us to judge of magnitude in general, distance, height, depth. The organ is located outward from Individuality, and fills up the corner of the arch of the eye outward from the nose; and sometimes it makes the forehead look as if the arches of the brow were set apart or as if there was a brace across the corner formed by the junction of the nose and eyebrow. Some brows look very stern and determined in consequence of large Individuality, Form, and Size; the eyes seem set

asunder, and these heavy cornices in the region of their location give a stern expression to that part of the face.

Whatever we can imagine that is tangible has bulk, occupies space, has extension, magnitude; this is different from the quality of form, because things may be of the same form though of very different size. A ball or a circle satisfies the faculty of Form if they are of a proper form, but it has nothing to do with the magnitude. A horse may be finely drawn and yet not be more than an inch long; if the engraving is well done, so as to bring the parts into proper relief, the observer is satisfied with the small or large size, since the proportion is proper. Then, if that figure were magnified by photography and made four inches long, the observer would continue to think of a full sized horse. Some picture books for children have a squirrel and an elephant side by side on a page, and the squirrel is the larger of the two. It is an injudicious method of illustrating books by such engravings for children; there should be some indication of natural size where they are put side by side, and not have a canary occupy more space on the page than the eagle does. But, when we take the individual picture, a good judge and trained eye, if the form be right, will call it a piece of good workwhether it is an inch long, four inches long, or nine feet long, standing sixteen hands high. And, while Form is satisfied with the different pictures of the same horse, Size comes in to recognize the difference; and the form of the three horses, or the three pictures of the horse, may be exactly alike-just as a bird shot, a buck shot, an ounce ball, a canister shot, or a cannon ball that weighs a hundred pounds are all globes; they are as round as they can be made. Form in the observer is entirely satisfied, and only Size knows the difference.

When we look into a tailor's window, we see the fashion plates of men; if the pictures are four inches long or eighteen inches long, we think of men of the full size. If the form is correct, Size accepts the matter in harmony with Form, and does not ask to have it changed.

Experienced cattle buyers have such a sense of size in connection with weight that they will estimate by size the weight of a hundred oxen in as many minutes, and they will not vary on the average as many as five pounds on each. We have noticed, also, that, after the ox is killed, being wisely and sharply bought in that way, the butcher who cuts up the meat for his customer will estimate the weight to an ounce by the size, and they have a method of giving a half pound more than is called for, showing that they know how much they are cutting off. And the writer has learned, if he wants two and a-half pounds, to ask for only two pounds of steak, and he is then sure to get the requisite amount.

In these days of multiplying pictures, the art of caricature has come

to be in great request. Caricature consists in making the form of different objects so nearly correct that it will be recognized, but perverting the size so as to make it funny and absurd. A man whose nose is large will thus be depicted with a correct form, but its size will be exaggerated; so with the mouth and chin. And those who have been accustomed to read the caricatures of portraits of public men for the last twenty-five years will remember how a handsome governor of the State of New York, who had a very large chin and used to have it clean shaved and brooded over by an elegant and wide-spread mustache, was exhibited in caricatures with a chin in true form in a portrait intended for him, and, by magnifying the large chin very much beyond its proper size in proportion to the rest of the face, it was thereby rendered funny, and always was recognized as his peculiarity.

One of the desirable peculiarities of penmanship is to have the letters and figures of uniform size, so that each page of the writer's work will have the appearance of method. How common it is for persons to begin to write a word with well-formed letters and end the word with a rippling, crooked line, violating the faculties of both Form and Size.

These faculties aided, perhaps, by Color, enable people to remember the forms of the human face. Individuality being also well developed serves to call the attention of the observer to the different points and peculiarities of a face, and will aid a man in carrying in his mind the picture of people whose features he has seen but once. The late President Van Buren was remarkable for his memory of faces and of names, and his portrait indicates a large development of the organs of Form, Size and Color. In 1841, during the inauguration season of Gen. Harrison at Washington, I called with a party of friends on Mr. Van-Buren, and, while waiting our turn to be introduced, saw the key to his advancement to the high position of the presidency. A gentleman was introducing a party of friends from the State of New York, and, when he reached the fourth one of the party, Mr. Van Buren anticipated him by saving, "This is Mr. Thompson," "Yes," said the gentleman; "I was once introduced to you, but did not suppose you would remember it," "Oh, yes, certainly; you were introduced to me at Syracuse in 1835, six years ago, on the occasion of the visit of Gen. Jackson to your state; and with you were Mr. Watson, Mr. Cornell, Mr. Williams, and Mr. Foster, and you were the second one presented." And the gentleman said it was exactly so. I then saw the secret of his popularity.

A man in commercial or political life, especially a minister or a physician, who remembers faces and names, will, other things being equal, attach people to him, and he will have a warm and loyal personal following. People like to vote for a man who remembers their given name. In business, those who have that faculty will succeed forty per

cent. better than the average, and eighty per cent. better than one who forgets customers and must always ask their names. It was said that Napoleon Bonaparte could remember the name of every man in a division in his army.

The memory of names is connected with other faculties besides Form and Size, but these faculties remember the face and its form and size, and the individualism of a man as different from other men; and then the memory of the name, aided by Tune and Language, is connected with the person's answering picture. Persistent daily use cultvates the organ of this faculty.

WEIGHT.

One of the qualities of matter is weight or ponderability; the feather or a mass of feathers has extension but little weight. Take for instance the different kinds of wood, some wood is very light, it is porous, the particles of matter are adjusted in a spongy form and the wood is compressible; bass wood and palmetto are very lightly composed, bass wood is very compressible and the common woods which are used in carpentry are light. As we advance in the investigation of different kinds of wood we come to box wood, which is of very close texture and weighs heavily, then there are others, still more solid and heavy, and finally lignum vitae and that sinks in water instantly. The truth is, matter obeys the law of gravitation in proportion to its density; the cork dances two-thirds of its size out of the water, and some kinds of wood will float just level with the water, the relative density of such wood and water being just about the same, and some others will sink.

This faculty of weight brings us into harmony with the law of gravitation, we adapt ourselves to it without thinking, and in proportion to the strength and excellence of this faculty any man or animal in that proportion is able to maintain his equilibrium. Some horses are surefooted as some men are and some are stumbling, they lose their equilibrium readily. Those in whom this faculty is strong readily obey the law of gravitation in respect to themselves; and the walker, the dancer or the worker will make easy and graceful motions in proportion as this faculty is well developed in him. We occasionally see a person who walks with a lounging, swinging motion, throwing himself from side to side, as if it were hard work to gain at each step the balance of the body. The process of walking is simply losing the equilibrium and recovering it; we lean forward and would fall down, but we put out the foot and restore the equilibrium and the motion of the body is continued rapidly. It is pretty hard work to stand perfectly straight and put the foot out and pull the body forward by musele; and so, people is walking fast lean forward according to the speed of their walking and then their gravity helps to propel them. A ball or wagon-wheel rolling down an

inclined plane touches the incline at a point behind its center of gravity and the weight of the wheel projects it in obedience to the law of gravitation. When we come to a dead level like a billiard table, we must give momentum to the ball to move it, and when the momentum dies out the ball stops sometimes within an eighth of an inch of going into the pocket; so the billiard player requires to appreciate this sense of gravity and to give the proper impulse or impetus by the blow to the ball accordingly, and so also a man who rolls ten-pin balls or who throws quoits.

A horse which lacks the sense of equilibrium makes a very hard saddle beast, his steps are uneven upon the ground and it shakes a man uncomfortably. It will be observed that when a dog or a horse is rapidly running and turns a corner his body is thrown inward as the momentum throws the animal beyond a line at which he wishes to turn, and so he leans inward. A circus horse half lies down in cantering around the circle, but his momentum gives a centrifugal force which prevents his falling down inwardly when leaning over at an angle of forty-five degrees while he goes around. It will be recollected that where the circle in a circus is small, they have to build up a bank of earth at an angle of perhaps thirty degrees, and the horse in his progress braces his feet against this bank of earth as he goes around, and so also the monkey that rides on him, and the circus lady, all lean inward; and thus the whole business is arranged in obedience to the faculty of Weight, which adapts us to the law of gravitation.

Blondin astonished the world by his feats at Niagara, walking across that chasm on a tight rope, and when he was fool enough to wheel another fool in a barrow across the chasm, it made the public hold its breath, expecting every second to see the barrow, its driver and rider go to the bottom. Think also of the athletes in a circus where they climb one upon the shoulders of another on a high 'pyramid, and the last man stands on his head on the last man's head, and this seems to be easy and it is done according to the law of balance. How these wonderful feats of agility and balance illustrate the laws of nature and the necessity of obedience to them, and the immunity which such obedience gives us.

The leaning tower at Pisa makes a man tired as he looks at it, but the line of gravity falls within its base, and therefore it stands as easily as the two parts of an arch that lean against each other.

Workmen who build and walk the frames of lofty structures, require to have this faculty in active condition. Seamen who go aloft with a steady head and hand, doing the work required in the darkness of tempestuous night, swinging through space on the rigging, must have this development.

Our judgment of the weight of things is measured by the perfection

and the training of this faculty of weight. A friend of mine was looking from a dock at Hartford, Conn., and he saw some men laboring with some small kegs that were new to him; they had one about as big as a lager beer keg, and they were fixing some skids to roll it up from the deck to the dock, which was about two feet above. He looked on and thought they were wasting time and were lazy; he was a broad shouldered, healthy, hearty young man, who could lift a barrel of cider into the hind end of a wagon, he had plenty of muscular skill and was fairly aching for a chance to exercise himself, he had been a day or two away from the farm; so he said "Why don't you lift that up and put it on the dock ?" "I would like to see you do it," was the answer. The challenge was no sooner given but he was on the deck and with the first tug he could not head the barrel up; it was white lead ground in oil and weighed about five hundred pounds; but he managed to lift it up on the dock. He told me of it twenty-five years afterwards and he said, "I have never gotten over it; while lifting it I got a stitch in my side as if something had broken or given way" He had lifted barrels of flour, potatoes and other farm products and he thought the men were making an unnecessary effort to handle those small barrels, which were only quarter barrels. People who ship and load ingots of iron and copper on deck, seem, to a man who has handled cord-wood, to make a great fuss in putting on their load, but experience in the quality of things assists us in judging of weight by size. He who should see two pieces of wood painted of one color and of one size would wager that they were of the same material and weight, but one is lignum vitae and the other is bass wood, and one will be found to be six times heavier than the other, and so a man will get wise by experience.

When we stand vertically and are perfectly balanced, we are conscious of some slight swerving one way to another; the muscular tension is more or less irregular, and that is simply a losing of the balance and a recovering of it. If a person will sit and look at a person who is standing he will find that he sways a quarter of an inch each way, but as soon as the man finds himself losing his balance, muscular effort regulates his equilibrium. Some people can stand without being weary, another wants to lean against something. We sometimes notice people in a car or in a ferry-boat who have to stand; one person will stand up straight, perhaps with his feet apart braced, and another will keep his feet close together and lean his hand against that person's shoulder, and so three or four will hang on to one person, this is quite innocent of course, but we often notice it when a group of ladies stand in a moving boat or car, and the one that the rest cling to, it will be noticed, is generally broad-shouldered and has strong features and resembles her father

and is self-contained, and probably has a better development of this faculty because of her inheritance from her father.

In proportion to the perfection of Weight do people stand at equilibrium. Now, if the process of lifting something tends to throw the person out of balance, he who can judge best by lifting things is the one in whom Weight is most keenly active and perfect. If a man who is accustomed to handling oak timber were to see an oaken log a foot and a-half in diameter and a foot long lying on a bench and he were challenged as to how much it weighed, he would estimate it according to his knowledge of the density of oak timber, and the magnitude of it would be estimated by the faculty of Size, and his faculty of Color would be satisfied with the appearance of the timber, the various mottled colors of its texture, and he would say, "Yes, that is oak; it is white oak, and it is heavy." And so he would estimate it according to his judgment of the timber. But suppose he were told to lift it and he would throw his body out of balance to the amount of fifty pounds, if that was what he supposed the bolt of timber would weigh, so that when he took hold of it it would just balance his weight; but suppose that bolt of timber had been bored out at the lower end, not honey-combed exactly, but made 'nto a kind of band-box, mechanical ingenuity could make it so that it would not be more than an eighth of an inch in thickness and the top end of the wood would seem to be perfect and yet it would not be more than an eighth of an inch thick; now supposing the man would throw himself out of balance fifty pounds, he supposing that the wood weighed that, then the artifical band box would fly to the ceiling and the man would measure his length on the floor. The faculty of Weight would be deceived by the faculties of Size, Form and Color in wrongly estimating the weight of the hollow oaken bolt of timber.

Combe tells an amusing incident of a man who considered himself a great judge of Weight. In Scotland there was a man who was a pretty keen judge of the cheeses which were exhibited for sale in a store, and he and others would lift the different cheeses after estimating and giving a judgment of their weight by looking; and sometimes they lifted first and judged afterwards, having a good development of the faculties of Form, Size and Color. But the facetious grocer once obtained from a band-box maker a band-box constructed in the shape and form of a cheese weighing thirty pounds; he then took some butter and greased it, it was of the right color and made so that to the sense of touch it would seem like a cheese and then he challenged this man as to its weight, who estimated it from twenty-eight to thirty pounds, then when he undertook to lift it to verify his judgment, the band-box cheese went to the ceiling and he went on his back, for he had been deceived with regard to the law of gravitation and equilibrium.

Another way to illustrate this: there are eggs of different sizes and their weight depends upon their size, the quality being supposed to be alike in the main. If we take an egg of a given size and show it to a man, Individuality is satisfied with its appearance, it is a thing; Form shows him the oval and egg-shaped outline, Form is satisfied; it is of the usual size of an egg and Size is satisfied; he lifts it and the faculty of Weight testifies to its being right. Then suppose he is shown another similar object, but the experimenter has carefully pierced the ends of the shell and has brown out the contents of the shell completely, it is only an empty shell, but Individuality does not know it, Form does not know it, Size does not know it and Color does not know it, but when he lifts it, Weight tells him the story.

Watch people going and coming from market, and sometimes people have to bring their water from a spring in a pail and perhaps have to go a hundred vards for it, or twice that distance. If a full grown person goes for water with a pail, and feels strong, he carries the pail full; if he is less strong, he fills the pail half full; and if he is a little fellow, he gets perhaps two inches of water in the bottom of the pail, but everyone of them will lean sidewise, as the grocer and the butcher boy when carrying burdens will do; and I can think of nothing more awkward than to see these louts of boys with an apron on, not caring at all apparently for public opinion, with their elbow through the handle of the basket, and sometimes a boy will have about fifty pounds of stuff he will carry almost as much as he weighs himself, and so he leans at an angle of fortyfive degrees and very often travels with his mouth wide open, but he is obeying the law of gravity if not of decorum; now suppose there were two baskets, or two pails of water, one on each side, each burden would counterpoise the other and the person would stand erect in walking.

In the districts where maple sugar is made they have what we call the "neck yoke." It is a piece of wood fitted to the shoulders and from the tapered ends of which are suspended cords with a hook to hitch into the pail, and the man gathering sap pours the contents of the receptacle out at each tree into the pails, and so he goes on walking straight up and not working very hard and yet carrying two large pails full of sap; and thus with the traveling trunk peddler, who used to have the neck-yoke to carry his trunks from farm-house to farm-house.

He who loads a pack-horse is careful to put the load in equal parts on each side, otherwise it is hard labor for the horse. We read of a man who had but little philosophy; he put a bushel of wheat into a bag and then put stones enough in the other end of the bag to balance it and then he went to mill Once a neighbor asked him why he did not divide the grain into two parts and then it would be only half as much load for the horse, and he held out quite a while in his argument, saying

"That was the way my father did." I knew a man who would go five miles to a store to get a jug of whiskey, he put the jug in one end of his sack and enough stones in the other to just balance his jug when it was filled. He took a good nip at the whiskey as he started for home, and when he got to his home in his drunken stupidity he hauled the bag off the horse and the stones and the jug came banging together. The stones did not leak out of their end of the bag, but the whiskey did out of its end; the man had too much weight in his head to understand the laws of gravity as between the jug and stones.

Sea sickness is in parta disturbance of the laws of equilibrium. There are some people who cannot swing for sport, there are those who resting in a hammock cannot have it touched in a way to make it swing while they are in it, they feel as though they were in a boat that was rocking and rolling; there are those who cannot ride in a spring carriage without feeling sea-sick. I have many times been on the water at sea when every man and woman, who was not a practical seaman, was laid up sick and I was the only passenger on board undisturbed. I would feel the sensation of approaching sickness on account of the surging and swinging, which I fancy was the surging of the blood in the brain, and I would try to get as near midships as possible and stand and hold my head in one place and let my body and legs sway with the vessel so as to keep my head without swinging, and for hours I have stood that way fighting the sea-sickness, and I was the only man in sight except the sailors. This has occurred as many as six times in my experience, though my sea-faring has always been coastwise, unfortunately I have never had time to cross the Atlantic in spite of a life long inclination.

An effort has been made to have a cabin hang within a ship and so privoted that it will not roll this way and that, and it has been a success as regards sea-sickness with most persons. If a person in eating at sea will take a dry piece of bread and a slice of lean meat, and so get nutrition enough, not too much, and have the food in a small compact body after it is taken down, so that the stomach can gather round it and hold it quietly; whereas if a man eats soup and drinks a cup or two of coffee and considerable quantities of water, he will have the contents of the stomach surging around like so much fluid material in an Indiarubber sack; if he will follow the first method it will be much less likely to produce sea-sickness.

I was going to Portland, Maine, from New York, and when we passed out from Vineyard Sound into the open ocean, we were just going to dinner, the sea began to be rough, but the passengers ate stewed tematoes, cucumbers, string beans and peas, and some ate green corn, it was a dinner of great variety and bulk, and I was urged by my friends around me to try some of this and some of that, but I said "It is going to be

rough when we get into the ocean." For we had just met our alternate ship and somebody on the quarter-deck had made motions with his arm like the rolling of the sea, thereby telling us what we had to expect, and so I ate a piece of dry bread with a small slice of corned beef lean, and I left all the cucumbers and the succotash and fluids out of the list; in an hour's time we were in the fresh breeze and half an hour later I was on deck alone, and from that time until dark we had it rough and I stood midship, badly sheltered, but in equilibrium, and avoided the sickness.

Applying this faculty of Weight or the idea of it to art, mechanism, penmanship, it is full of interest; the beauty of a page of penmanship consists in regularity, it may be vertical, it may lean forward, even backward, but if there is harmony so that all the long letters on the page slant alike, it is acceptable and we learn to read it easily and there is a comfortable look about it; but when a "t" is made straight up and down, and the "h" following it is slanting at an angle of forty-five degrees, and the "g" that comes pretty soon is made in a backhanded way, the bottom swinging off in an opposite direction, it makes a page of writing look confused and out of order.

Previous to typewriting, our characters were taken in shorthand and written out in longhand, and then penmanship was one of the elements which were taken into consideration when applicants sought positions as amanuenses. A young man wrote us from a distant state that he was a shorthand writer and would be glad of a position; but such penmanship !-it leaned every way, no two letters succeeding each other seemed to be bent on the same destination or purpose, the "t" and the "s" would lean backwards perhaps, and then the "o" would lean in a proper direction forward, and the letters looked as if trying to separate themselves, and I wrote him politely that we had no vacancy just then. He wrote again a month later, he had sent a sample of his phonography, had translated his letter into longhand, and I felt that I owed him a duty as a human brother to give him the solid reason why we could not employ him, so I wrote: "Your handwriting is such that it is not possible for us to employ you, and I doubt if there is an establishment in New York City that would employ such a penman. If you will amend your penmanship we could give you a position."

He wrote back instantly: "If that is all I am sure I can cure it." In a few weeks time he wrote again and every word looked as if it was afraid of falling over. We had ventured to give him some ideas. I had returned part of his letter and had copied it as it would be acceptable, and he took the hint; about a week later we had another letter which showed improvement, and then I wrote that he might come on, and the beauty of the story is that in less than twelve months from the time he came, he

wrote the handsomest hand of anybody in the office, and for years afterwards if we wanted a piece of nice writing to label something in the window, we would get him to do it, and his penmanship thirty years later retains the beauty and grace he had forced into it. He had not been taught to write, he did not care to trouble himself, but when he found it to be necessary, he became an excellent penman, and his name is now known throughout the entire scientific world for pre-eminence in a special branch of scientific investigation.

The faculty of Weight enters into many things: as the hanging of pictures. I go into some houses and every picture is swung a quarter of an inch to the right or left, the truth is the person's faculty of weight is developed in such a way as to make that error all the time, and when I have the chance I go around and straighten the pictures.

Persons who ride on rail cars will notice in going up-grade that the houses all lean the wrong way, we somehow have a feeling that car windows are level and as a house stands vertically it seems to lean at a different angle.

Carpenters who are putting up work will plumb a thing by the eye, for instance a door jam or a window frame, and they determine whether an article is level by the faculty of weight. You ask how this is done, the answer is "The faculty of Form and the faculty of Weight combined give a sense of the right angle with a vertical line." And thus we level and plumb things and it looks easy to us. In talking upon this subject people sometimes say "Oh, we compare with something else." Suppose a man is on a hillside where there is nothing vertical within a mile of him, and he wants to set a stake in the ground, suppose he wanted to build a fence; he would not need a plumbing line nor a levelling instrument, but he would set the post and walk around it and have the consciousness of the vertical in himself and that would determine for him whether the post stood erect; and there are thousands of men who can erect a post on a hill side and come within an eighth of an inch of it being absolutely vertical. That is mechanical talent, and it helps a man to do work that requires to be plumb.

There are some bricklayers who cannot set up a corner though they have the plumb and the level in their hand to adjust every brick by; another man will adjust two or three bricks by the instrument and then will put up a corner two feet high which of course should be plumb and square and true, and it is so, and when he lays it he does not have to fuss with every brick he lays and put the instrument up to see whether it is plumb or not; one man will spend three times as much time in laying a corner as another will because this faculty is less developed in him.

Weight serves also to give a person a sense of the force required to

use tools; it gives the pianist the proper control of the skillful touch required in playing; the dancer, the gymnast, the billiard player, the artistic operator, should be well endowed with weight to move with grace, precision and success.

COLOR.

Color is a distinct quality of matter; it distinguishes one thing from another. If two objects are precisely of the same size, form, and weight, the color being different in the two is their only mark of distinction. A dozen pieces of cloth from the same web may be dyed as many different colors to suit the different fancy of each buyer, but in all other respects except that of color the cloth is alike. But truth requires us to say that as cloths are colored the materials used to produce different colors make a difference of feeling in the cloth. A man who is a dyer, if he had colored pieces of cloth from the same web, one blue, another black, and another brown, would know by the feeling of the cloth when finished which the colors were by the peculiar feeling of the cloth. The blue, of course, would be an intense color, but the material is not calculated to harden the fiber, or make it feel harsh; while some kinds of black and most kinds of brown are colored with material which produces a harsh and peculiar feeling.

Laura Bridgman, who was deaf, dumb, and blind, and died recently, was able to distinguish worsteds of different colors by the sense of touch. And she would go to the store and ask for crochet worsted, and if an assortment of colors was thrown down before her, she would handle them and determine which was green, red, orange, or brown, and select as many skeins of each as she thought her contemplated work would require; and commence knitting a lamp mat, and it would be of all peculiarities of figure represented by color. She would make them of different patterns, and would be able to run her fingers over, and tell the color of every patch, or section, of the work. I have seen her do that.

Well, a dyer of woolen cloth, as we have said, will distinguish between three or four different colors where the stock or material of the cloth is of the same sort. Of course, Laura Bridgman had no idea of color except that she had been told that colors varied; and she knew the quality of the touch, and therefore would grade it accordingly. The faculty of Color cannot be measured and estimated by the perfection of vision; for persons whose vision is imperfect will revel in colors and rejoice in their beauty. Much is said about color blindness; there is equal sense in talking about music deafness, for color bears the same relation to the eye and to sight that music does to the ear and to sound. One may observe objects and appreciate the difference in their form, size, and weight and know nothing of color; just as a person will hear

sounds as noises without recognizing the musical element of the sound. Some persons are deaf, can hardly hear conversation unless it is screamed into their ears: yet they will listen to music and take in its harmonies with great pleasure and appreciation. The vibration of the tympanum is maintained with more system and steadiness by music than by mere utterance of words; hence the partially deaf hear music or feel it better than conversation. Of course, poorness of vision is an impediment to the nicest appreciation of colors, just as weakness of hearing may be an impediment to the fullest enjoyment of music.

The faculty of sight is separate from that of color, simply recognizing light and shade; and to a person who is color blind certain things which have intense color have a somber look. The photographic instrument inclines to take blue white, and to take red black, which is no color except the contrast of white. So that blue, red, green to the color blind are so many removes from white toward shade, or darkness. I have met several men who had excellent sight, and they could distinguish the different birds as they were flying in the air by their form and motion; and they said that all colors looked to them very much like ashes,—like something in which the colors are all blended. I saw two men in Massachusetts in 1842 who could not see red cherries among the green leaves of a cherry tree. Some merchants have to label their goods as to color, and put the different colors by themselves; then if a customer asks for 'red or green they look for the label, just as they would for strychnine or arsenic in a drug store.

Some artists are capable of representing form perfectly in light and shade; they can make crayon pictures, but they cannot make pictures in color. One artist had painted a lady's portrait, and some one told him that it required a little more color in the cheeks and lips; and unable to tell the difference between pink and blue he painted them blue. We know artists who are excellent in coloring; they make the flesh look as if it were really living, as if it would yield to pressure, but they are unfortunate in drawing. It requires the best combination of all the faculties, and in the highest degree of development, to become an artist of the immortal sort.

In 1858 the author was invited to a house in New York to make some examinations; he was to go to a particular number of the street at a given hour in the evening, and ask for a given name, which was a fictitious one. The name, on examination, was not found in the directory. Few persons were present during the examination, but one gentleman was described as being artistically inclined, yet being deficient in Color he would be more likely to work in marble or with crayon than in colors. An oil painting and a crayon picture were hanging up in the room, of about the same apparent value, and I said, by way of illustra-

tion, that if those two pictures were on sale at an auction he would pay forty dollars for the crayon sketch, and only twenty dollars for the oil painting. The next man who was examined I described among other things as being very fond of art, but more distinctly fond of colors; and again used the two pictures as an illustration by saying that if they were on sale at an auction he would pay forty dollars for the oil painting, and twenty dollars, only half as much, for the crayon picture. The examinations being finished we were introduced to the gentlemen by name, the first being the great crayon artist of New York, Mr. Krouse, who made the crayon picture; the other Mr. Church, of Niagara fame. I was then taken into the parlor, and shown the original study of the Falls of Niagara by Church.

In cities flowers are much more cultivated than they were forty years ago; churches now must be decorated, funerals are smothered by the wealth of floral offerings, and weddings blossom out like a fairy garden. It would be well, therefore, for gentlemen to be cultivated in the sense of color, so that they may enjoy and have some idea of the flowers they are supposed to pay for. In women the faculty is more developed generally than in men, because from childhood girls are dressed in gaily colored clothing; and their attention, of course, is constantly drawn to the various shades. Consequently, they become fond of pictures and flowers which have a tendency to cultivate the organ. Boys, on the contrary, are dressed in brown or grey cloth, because such colors are cheaper and do not show the dirt; their clothing, therefore, does not call their attention to color or exercise the faculty that has to do with it.

The knowledge of colors is a source of refinement in society; it is necessary in some kinds of business. In a dry goods store a man who is not up high in the faculty of Color will not rise high in the scale of influence or success as a salesman. And there are so many kinds of merchandise, so many commodities the value and excellence of which are represented by color, that the faculty should be well cultivated in men who expect to handle goods. And there is such a lavish display of colors on land and sea and sky that whichever way we turn our eyes we are greeted with the paintings of the gods. Our good friends the Quakers used to ignore colors except gray and brown, something that could not be pleasant to the natural senses; and for centuries they ignored music. Even in our day a piano in the house of a Friend would be considered by the elder members as an indication of vanity and worldliness. The harmony of colors and of sweet sounds belong to the created universe; the flowers, the birds, the shells, the fruits, and all the varieties of verdure which charm the eye, are the handiwork of the All-mighty, and mean something; and men ought so to be cultivated as to enjoy these beauties. The singing of birds and the melody of the human voice cannot be left out of life without leaving a void. We are happy to note, however, that in recent times music and art and beautiful colors are finding their way into the homes of our plainly-dressed Friends.

The organ of Color is located a little outward from the middle of the arch of the eyebrow; when it is large it causes an elevated arching in that region of the brow. Some who have been born blind, or who have remained blind from early days, have been found with a deep depression in that part of the forehead,

ORDER.

If everything around us were to become mixed and confused, so that we did not know where to expect to find each particular thing, it would give us a sense of painful impatience. Those who have moved their household goods, which have been hustled and hurried from the cart into the rooms without any regard to where they belonged, find that "moving" is a wonderfully patience wearing process. The second move I made after coming to Brooklyn to live was directedly across the way from the house I occupied, and it being vaeant for a few days before noving time we had the house cleaned and made ready; the carpets were taken up and cleaned, and laid down in the new house in rooms corresponding to those in the old house, and the rooms being of the same size the carpets fitted. As the house was directly across the street we hired two substantial men to pick up a sofa and earry it by hand across, and put it in a room similar to the one they got it from and in the proper place; and so with bedsteads and bureaus and other pieces of furniture. And when the housewife went over to the new place, it looked very much like the place she had left-every room being furnished in the same way, and having the same relative position in the house. True, she had to look a different way for sunrise, but order was transferred from one house to the other, and therefore it was pleasant to find everything in due arrangement.

To a child the blossoms of spring, the fruits of summer and autumn, the early frost, and the setting and rising sun are a surprise, and awaken in him wonder. He is not accustomed to them, has not expected them. But time will teach him the order of nature;—he hopes the cold winter will be past and the balmy spring return, that the summer flowers and the singing birds, and the happy autumn with its harvest, will come. After awhile he hopes for the winter, when skating and snow-balling and riding in sleighs and making snow men in the yard are indulged in as pleasures. He gets used to the order of creation; he looks for and expects the changes. Those having the best development of Order desire the changes to be uniform; if the season is early or a little late they grumble; if the weather is not seasonable they find fault'; if people do

not keep things in order and tidy they are inclined to be unpleasant about it. A teacher in a school, a mother in a family, a master in a store or a shop, desires to see an order which he can trust and which the rest can trust; being the best way they want that best way to recur always.

Suppose the order of nature were to be violated—suppose that we were to find potatoes on apple trees, and apples in the ground; suppose buckwheat were to grow like rye. We do not expect to "gather grapes of thorns, or figs of thistles." When a hen has been cheated by having ducks eggs instead of her own put into the nest for her to hatch, and has patiently waited and hoped to see them develop into the image of herself, she is terrified beyond measure when she sees her broad beaked brood rush into the water for the first time. Her idea of order or fitness has been violated. If a duck has hatched chickens she wonders why they refuse to follow her into the water.

In our disposition of affairs we seek to have a place for things, and each thing in its place. Birds have a particular perch; cattle a particular place to lie down in the pasture, or in the yard to which they are driven at night. Some people are orderly, but there is no good sense or propriety in their methods. One woman kept her teakettle just in front of one of the andirons, by the fire-place, and for forty years her husband had been in the habit of coming home and finding that teakettle in that particular place. He came home one time when his wife was out, and he had been drinking until he had got his brain into a resolute and mischievous condition; he hung the teakettle on the crane and built up a roaring fire, on a hot summer's afternoon. His wife coming home saw the smoke pouring out of the chimney in such a volume that she thought the house was afire. She rushed in and said, "Oh, husband! what in the world are you doing?" In his maudlin way he pointed to the teakettle that was red hot and just ready to fall, to collapse, he said: "I am melting the thing; it has stood there forty years, Ruth, in front of that andiron, and I am tired of it."

He had endured the order, but it did not suit him.

Townsend Sharpless, a wealthy Quaker of Philadelphia, had a tool shop, with tools for every kind of work, such as would occur around his premises. On the broad, smooth partitions he had the tools of every sort hung ups—aws and augers of different caliber, a place to put in chisels and other things; and when they were all arranged, he knew where each tool belonged. But his men did not. So, he got a man to come and paint the shape or picture of the tools—a two inch auger, an inch and a half auger, saws of different kinds—just where they belonged when in place; so that when the tool was removed, still the picture of the tool was there. It was a fancy of his to have every man know that he must

put the tool when it was not being used on the very peg where it belonged. That was order in an orderly manner.

In a store, for instance, a book store or a dry goods or a store of things of every sort, they study to know where an article will be most conveniently placed; if it is something that is wanted often, it is put where it is available: and so on through the whole establishment. And after awhile this method is developed, and a clerk by being there a few days will find out where many things are kept, and know where to find them when they are wanted. It requires another faculty, however, Locality, with Order, to be able to find the place readily without groping. One fact is to have the things in a place, and the faculty of Locality tells us how to find that special place. And so, with Locality and Order, a man can find everything in the room or in the store or shop without a light, which has a particular locality and an orderly arrangement.

Some teachers handle their classes in military order;—the bell is rung for such a class, and instantly the pupils leave their seats and take up an order of march, and at another signal they march around to the place where the class recites; and a touch of the bell sends them back to their seats in the same order. It saves friction; it saves time; it cultivates orderly habits; it gratifies Order, and gratification is pleasure.

I once saw a man in a nice new railway car put his boots up on the velvet cushion of the seat; and the conducter being proud of his bright new car, coming along, asked permission to put a silk handkerchief over the seat, and told the man that if he wished he might put his boots on that. It cured him of putting his boots on car seats for that trip, and the delinquent was not made angry. The rest of us smiled and saw the point for our own use.

Order is supposed to have relation to cleanliness. I knew a man who was slovenly in his house; the kitchen had no carpet on it, and he would spit tobacco juice anywhere on the floor. And his wife was a goodnatured person, and had tried, perhaps in vain, to cure him of the careless and dirty habit. I had talked with my wife about it, and wondered how it could exist. Time went on, and his wife was called to her reward, where tobacco is not spitted on the floor and where such weary wives are at rest; and perhaps seven years later I went to see the same man, who had moved into another town, and had married a second wife. He was ploughing in his field when I went to see him, and he unbitched his team and went to the house with me. As we went into the cleanly kept kitchen everything was bright as it could be, and he said his wife unfortunately happened not to be at home just then; but, says he, "I'll put on another pair of shoes and go with you to the village to see some friends," And as he took off his field shoes, sitting in the kitchen, there happened to be some dry dirt in them which came from the

furrowed field and was emptied out upon the bright, clean floor. "Oh," said he, "what have I done!" And he went and got the dust pan and brush, and cleaned it up nicely, put the things away, went on tiptoe out of the kitchen, and emptied his shoes on the ground. When I returned home I told my wife the story, and we had a good laugh over it. What a change had been wrought in a man six feet high and who weighed 180 pounds! I did not see the second wife; possibly she was not so amiable as the first one. She was certainly more tidy, and she taught him a good lesson in regard to neatness; and he appeared to have taken it kindly.

Perhaps ten years later I again called on my friend; he was married to a third wife, and lived in the village in a pretty good house: and I wondered whether things would be as well kept as they were during his second wife's reign. She was fleshy, dark complexioned, and had a kind of oily countenance and good nature; and I noticed that she was far from tidy in everything that belonged to housekeeping and the table. And he had from force of custom relapsed into habits of disorder and untidiness.

So that a man who is inclined to be untidy can be trained to order and tidiness; and certainly I never was in his house when I thought it was so nicely kept as by the woman whose order and method shone brightly in everything she touched. For thirty years I have been sorry I did not see her.

I knew an old farmer who lived in a large and prosperous village; his lands stretched away back into the fields; and he was remarkable for his method and order. He used to hire a man for the summer, and if he found anything out of the proper place, an axe, for example, in the woodhouse, where the kindling wood was prepared-if he found that the hired man had left it at the chopping block, where he had been cutting wood with it, he would wait until the man had gone to bed and was quietly composed for rest, when he would rap at the foot of the stairway and call his name, requesting him to dress himself and come down. He would then ask for the axe; and when it was shown to be in the wrong place he would say, "I looked in the proper place for it, up there on the sill behind that cleat-I always keep it there-and since it was not there I thought I would inquire what you had done with it." It was so goodnaturedly done that the young man accepted it as a pleasant reproof, but he never forgot after that to put the axe in the right place; or for that matter anything else on the farm. Every harness, curry comb, pitchfork, rake, tool of every sort had a place; and when it was not being used it was put back. Pope says "Order is heaven's first law," and what would become of the universe of worlds and of the laws by which all these things are regulated if order did not

reign. Early and persistent culture of the faculty would be a great benefit to many thousands of people who are now careless in this matter, and who waste time and patience and temper in conducting their affairs.

CALCULATION.*

The faculty of Calculation or Number, is necessary in the mental constitution, Number is a condition if not a quality of things. Individuality enables us to distinguish between one thing and another, but does not count the number of them; it might give us the idea of many, as when we look at a load of sand, containing particles numberless. Thus we measure sand by the bushel, as we do grain; we count sheep, cattle horses, and buy and sell them by number, as we do eggs by the dozen; but peas, beans and corn we cease to enumerate, and sell by measure. The faculty of Number, or the idea of Number, seems to be manifested in some of the lower animals which are usually most intelligent; it is said that if ten men enter a cavern or a ruin which some kind of birds inhabit, they all fly away from their nests and perch near by; if three men come out, they all eagerly fly back. Their idea of Number has been exhausted on three, and they seem amazed to find that some men are left, and again retreat; three more men going out, the birds rush back again, showing that three is the extent of their idea of Number. Cats when deprived of half a large litter, do not seem to appreciate the difference in number, but if five are taken away and only one is left. she has an idea of a difference between one and six, and will hunt to find that which is lost. Some negro tribes can count only to five, and use no compound terms; they say five one for six, and five two for seven, or make a shift by using both hands for ten, both hands and one foot for fifteen, both hands and feet for twenty, and above this is "many" or innumerable. The Esquimaux Indians have no idea of Number above five, everything else is many. When mathematics are examined in the light of Phrenology, it apparently depends upon the addition of one or more of the other faculties to assist the organ of Number: if mathematics be the doctrine of quantity, Size and Weight must be brought into use, and in geometry and trigonometry, Form and Locality as well as Size and Weight must be included. In the higher branches of mathematics, the aid of many faculties is demanded, commencing with Calculation or Number, and prosecuting the subject towards the higher branches. The scholar is compelled to use one faculty after another, until we find the perceptive and reasoning organs all active and under control, which is the true abstract object of educa-

^{*} From "How to Teach, or Phrenology in the Schoolroom and the Family," by Nelson Sizer. Fowler & Wells Co., publishers.

tion to give the pupil a healthy, active, manageable brain. Those wonderful calculators who have astonished the world, such as Zerah Colburn, are generally not mathematicians, as he was not, though he was given culture in that direction, and it was expected he would astonish the world, but as the higher organs of the intellect, which comprehended the philosophy and relations of abstract subjects were weak, he failed. A mathematical cast of mind requires that a person should follow something in which the exact and mathematical can be made serviceable. We often meet with pointed illustrations of this; a man brought his son to our office for examination; they looked sad, discouraged and gloomy. When the young man took his seat, the father spoke in a sour kind of way, saying he wished to know what that boy could do to earn his daily bread. After careful examination, we said "Anything, unless it be something in its nature like wood engraving." They cast a quizzical look upon each other, and the father asked why he would not succeed in wood engraving. We replied, "He has so much Order and Calculation he would want to fix a machine or use gauges to space and govern his work, and do it as by machinery." The father informed us that he had then just taken the boy from a wood engraver who had been trying for six months to teach him the business, and complained that the boy wanted to use gauges and rules of measurement, and was not willing to work by the eve. We advised the father to let the boy go at architectural drawing or carpentry, where he would be required to work by mathematical rule, and where he could employ mechanical ingenuity and artistic taste at the same time. The organ is located back of the external angle of the eye, and gives squareness to that part of the head.

The Literary or semi-perceptive organs are Eventuality, Locality, Time, Tune and Language, located above the perceptives. The reasoning organs are Causatity and Comparison and are situated in the upper part of the forehead.

THE STUDY OF HUMAN NATURE.

In the study of Human Nature we find one person who is full of fire and needs guidance and restraint, another is timid and diffident, lacking in force and fortitude, and needs encouragement; another is too sentimental and should be taught the need of a more practical life; another is given to sordid greed, and worships, if not the "Golden Calf." the gold that might make one; another requires advice as to diet and daily habit and hygiene; another is precocious, too imaginative, too intellectual, and needs ballasting and instruction in the way of daily habit and economic duty; another is imperious, irascible, and impatient; another is inclined to dissipation; another desires to know what he can do best, what kind of trade, business, or profession his talents, constitution, and aptitudes best fit him for; another is broken down by over-work or overstudy and needs information as to the cause and cure of the trouble.

Occasionally there may be a man so harmonized in body and mind, so smoothly related to life that he does not need help from physician, phrenologist, or life insurance company. Most people however, need something to fill out their deficiencies or restrain their excesses, or to guide their forces. As a locomotive carries its headlight in its front and illuminates a mile or two of track in advance of itself, so a proper description, phrenologically and physiologically, is calculated to illumine the pathway of hife, and if it does not make the grade easier it makes the transit more safe and sure.

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